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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/534,274

10/26/2005

Jun Hirano

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EXAMINER

TRAN, PABLO N

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

06/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                               |                               |  |
|------------------------------|-------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/534,274 | Applicant(s)<br>HIRANO ET AL. |  |
|                              | Examiner<br>Pablo N. Tran     | Art Unit<br>2618              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) 1-64 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 65-79 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 65-66, drawn to a communication system having a transmitting part radio communication apparatus, wherein the transmitting part radio communication apparatus determines the insertion interval of the known reference signal and transmits the data when receiving reception preparation completion information that is a response to the transmission request information from the receiving part radio communication apparatus..

II. Claims 67-68, drawn to a communication system having a transmitting part radio communication apparatus, wherein the transmitting part radio communication apparatus determines the insertion interval of the known reference signal and transmits the data when the transmitting part radio communication apparatus transmits data different from said data to the receiving part radio communication apparatus prior to transmitting said data and receives reception ACK information indicating that the reception of said different data from the receiving part radio communication apparatus has been completed.

III. Claim 69, drawn to a communication system having a transmitting part radio communication apparatus, wherein the transmitting part radio communication apparatus receives an information signal transmitted to any radio communication

apparatus from the receiving part radio communication apparatus, refers to the received information signal and determines the insertion interval of the known reference signal which is optimal in transmitting said data to the receiving part radio communication apparatus.

IV. Claim 70, drawn to a communication system having a transmitting part radio communication apparatus wherein the known reference signal insertion interval determining section refers to a temporal variation quantity of a propagation path response, and calculates the insertion interval of the known reference signal which becomes optimal in transmitting said data.

V. Claims 71-72, drawn to a communication system having a receiving part radio communication apparatus, wherein the transmitting part radio communication apparatus transmits the information for requesting the insertion interval of the known reference signal together with the transmission request information of said data to the receiving part radio communication apparatus and the receiving part radio communication apparatus determines the insertion interval of the known reference signal and reports the insertion interval of the known reference signal to the transmitting part radio communication apparatus.

VI. Claims 73-74, drawn to a communication system having a receiving part radio communication apparatus, wherein when the transmitting part radio communication apparatus transmits data different from said data to the receiving part radio communication apparatus, the receiving part radio communication apparatus determines the insertion interval of the known reference signal and reports the insertion

interval of the known reference signal to the transmitting part radio communication apparatus.

VII. Claim 75, drawn to a communication system having a receiving part radio communication apparatus, wherein the receiving part radio communication apparatus receives an information signal transmitted to any radio communication apparatus from the transmitting part radio communication apparatus, and refers to the received information signal and determines the insertion interval of the known reference signal, and reports the insertion interval of the known reference signal to the transmitting part radio communication apparatus.

VII. Claim 76, drawn to a communication system having a transmitting and receiving part radio communication apparatuses have known reference signal insertion interval, wherein the insertion interval of the known reference signal acquired by the transmitting part radio communication apparatus and the insertion interval of the known reference signal acquired by the receiving part radio communication apparatus are used to determine the insertion interval of the known reference signal inserted into said data.

VIII. Claim 77, drawn to a radio communication method wherein the communication managing apparatus determines the insertion interval of the known reference signal which is optimal in the communication with each of said plurality of radio communication apparatuses.

IX. Claims 78-79, drawn to a radio communication method wherein each of the plurality of radio communication apparatuses determines the insertion interval of

the known reference signal which is optimal in the communication with the communication managing apparatus.

2. The inventions are distinct, each from the other because:

Inventions Group I, Group II, Group III, Group IV, Group V, Group VI, Group VII, Group VIII, and Group IX are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, each subcombination Group has a separate utility, as stated above. See MPEP § 806.05(d).

3. Because these inventions are independent and distinct for the reason(s) given above and have acquired a separate status in the art as shown above by their recognized divergent subject matter and a different field of search is required for each group (see MPEP § 808.02), restriction for examination purposes as indicated is proper

4. Applicant is advised that the reply to this requirement to be complete must include (i) an election of an invention or a species to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

5. The election of an invention or a species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

6. Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) System. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 2618

Status information for unpublished applications is available through Private PAIR only.

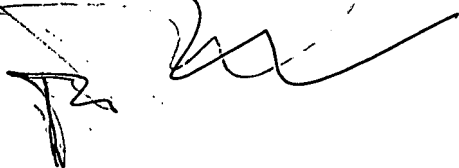
For more information about the PAIR system, see <http://pair-directauspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

June 6, 2007

**PABLO N. TRAN**  
**PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to be 'P. Tran', written over the printed name and title.

AV2608